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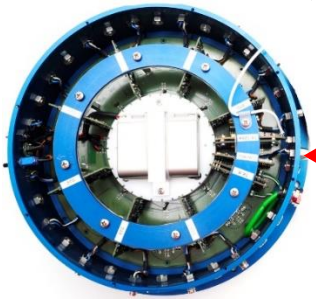
CTP32-Rotate

32 channel telemetry for rotating applications like wheels or rotors, high signal bandwidth, 16bit, software programmable

- Inputs for **STG, POT, TH-K, ICP, VOLT ..**
- Simultaneous sampling
- 16 bit resolution
- Software programmable
- Signal bandwidth: 32 x 0-3000Hz
- Battery power up to 6h
- Radio telemetry transmission
- Output analog +/- 10V
- Digital data interface to PC (option)
- Waterproofed ENC housing (IP65)

General functions:

The CTP32-Rotate is a 32-channel telemetry system for rotating applications with integrated signal conditioning for sensor signals, wireless digital transmission and analog reproduction.
In the encoder/transmitter unit the sensor signals are conditioned, filtered (anti-aliasing) and digitized (16-bit). Simultaneous sampling is provided for all channels. Finally, the PCM encoded data is transmitted via radio frequencies to the receiver.
Various configurations of different sensor modules are available incl. signal conditioning for strain gages (STG), thermocouples type K (TH-K), ICP sensors, potentiometer sensors (POT) and also voltage inputs. Mixed configuration available (2-CH-steps).
All sensor modules are software programmable via LAN-Adapter. The LAN-Adapter has an integrated web interface and enables easy access!
The stationary receiver provides 32 +/-10V analog outputs via Sub-D male socket (option: digital PC interface).
The analog signal bandwidth is 0-190 Hz (320kbit) and up to 0-3000Hz (5000kbit) for 32 channels. The measurement accuracy is <±0.2 % (without sensor). The CTP32-Rotate is specified for operational temperatures from -20° C to +70° C. The maximum distance between transmitter and receiving antenna is approx. 10-20 m (30-60 feet) – depending on the application! Mixed configuration available (2-CH-steps).



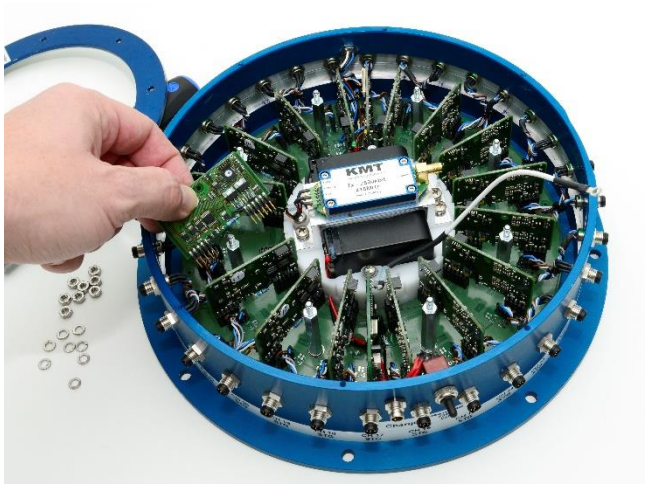
Specify CTP-acquisition modules at order!!

Frequency table	Cut off frequency from anit-aliasing filter (-3dB) and sampling rate (see red)
Bit rate	**32 CH.**
5000kbit	3000 Hz (7812.50Hz)
2500kbit	1500 Hz (3906.25 Hz)
1250kbit	750 Hz (1953.125 Hz)
625kibt	375 Hz (976.56 Hz)
312.5kbit	190 Hz (488.28 Hz)

CAR wheel	Truck wheel	Helicopter rotor
		

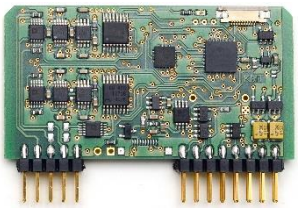
CTP32-Rotate Transmitting Unit Technical Data (Encoder)

Encoder in IP65 Aluminum housing

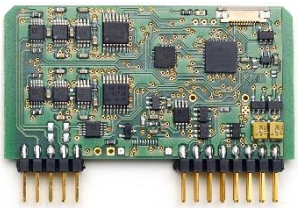


Encoder inside

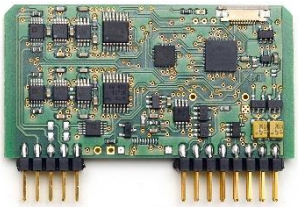
CTP acquisition modules (rotor side)



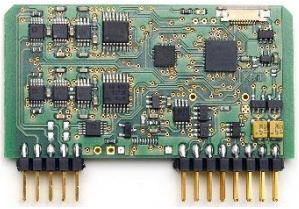
CTP-STG V3
Acquisition module for 2 strain gages
Full, half and quarter bridge (≥350Ω)
Fixed excitation 4V DC
Offset calibration by auto zero
Gain: 125-250-500-1000-2000
Signal bandwidth 0 Hz to 3000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption with full bridge 350 ohm 75mA



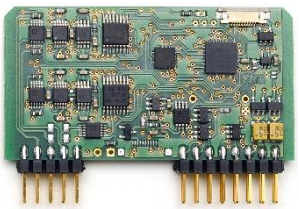
CTP-VOLT V3
Acquisition module for 2x high level inputs
Range: ±0,625V, ± 1,25V, ±2,5V, ± 5V, ±10V
Signal bandwidth 0 Hz to 3000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption 60mA



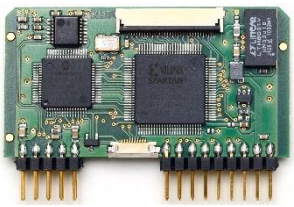
CTP-ICP® V3
Acquisition module for 2 ICP sensors
Current EXC. 4mA
Gain: 1-2-4-8-16-32
Signal bandwidth 3 Hz to 3000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption 100mA



CTP-TH-K V3
Acquisition module for 2x TH-K
Inputs galvanic isolated
Range -50 to 1000°C, -50 to 500°C
or -50 to 250°C
Cut-off filter 30Hz (more on request)
Resolution 16bit
Accuracy: 0.2% at 1000°C range
Current consumption 110mA



CTP-POT V3
Acquisition module for 2 poti-sensors
with ≥350Ω ... 10kΩ **(typical 1kΩ)**
Fixed excitation 4V DC
Signal bandwidth 0 Hz to 3000Hz*
(*see table of cut-off-frequency)
Resolution 16bit
Accuracy <0.2%
Current consumption about 70mA



CTP-CONTROL V3
Controller 1- 32 acquisition modules
Output: PCM
Programmable via LAN adapter
Current consumption 40mA, with LAN-adapter 140mA

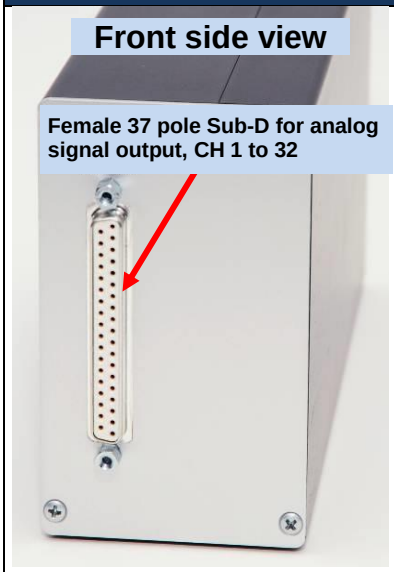
System Parameters ENCODER:

Channels:	32
Resolution:	16 bit A/D converter with anti-aliasing filter, simultaneous sampling of all channels
Line-of-sight distance:	up to 20m (depends of application and bit rate)
Powering:	Li Ion Accumulator 7.2V, 7800mA capacity up to 6 hours
Power consumption:	about 1300mA using 32x STG full bridge sensors 350 Ohms
Analog signal bandwidth:	See table
Transmission:	Digital PCM Miller format - FSK
Transmission Power:	10mW
Dimensions:	Diameter 250mm, bottom plate diameter 280mm, height 80mm (without antenna), 160 with antenna!
Weight:	3.60 kg without sensor cables and antenna
Operating temperature:	- 20 … +70°C
Housing:	Aluminum anodized, waterproofed (IP65)
Humidity:	20 ... 80% no condensing
Vibration:	5g Mil Standard 810C, Curve C
Static acceleration:	100g in all directions, **1000 RPM**
Shock:	200g in all directions

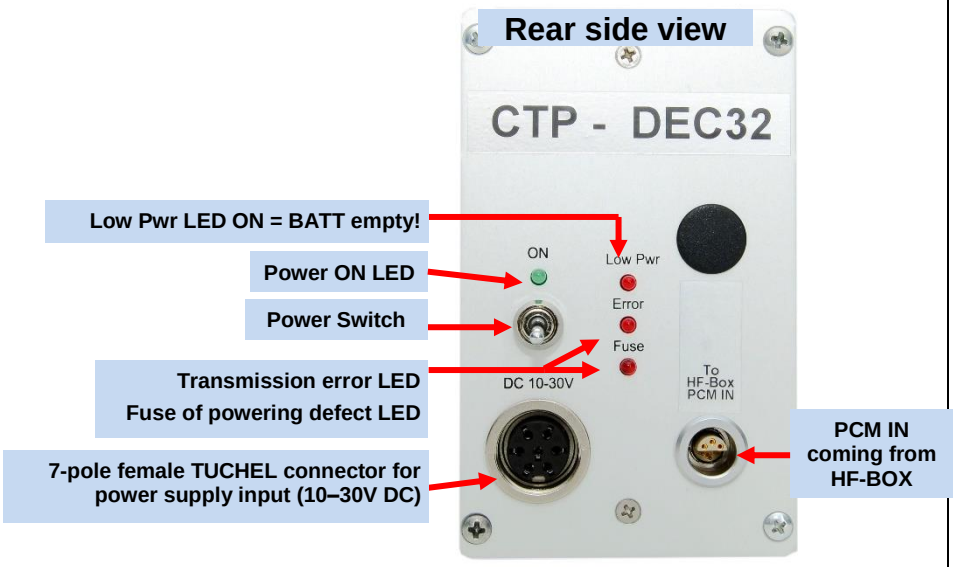
Technical specifications are subject to change without notice!

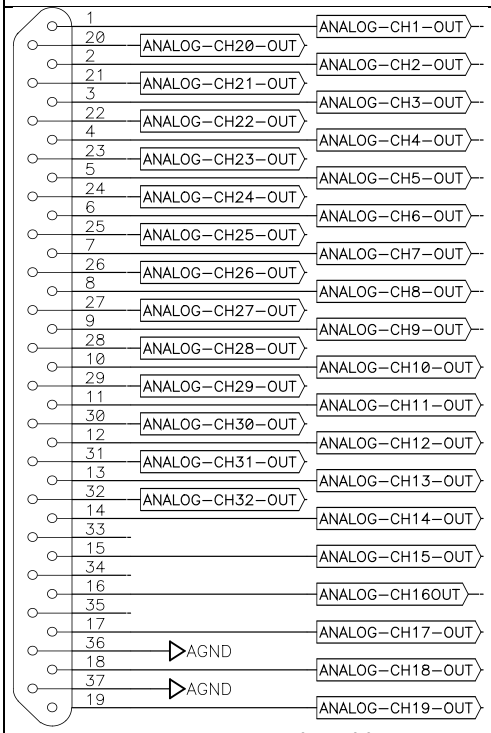
CTP-DEC32 Receiver unit for max 32 Channels output via 37 pol. Sub D (radio transmission version via quad receiver 1250 and 5000kbit)

Front side view

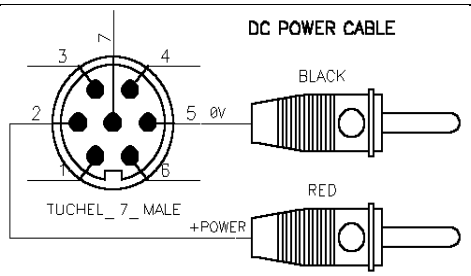


Rear side view





Plug-side



Optional BNC32Box. Connect on 37pol Sub-D

CTP –DEC32 System Parameters:

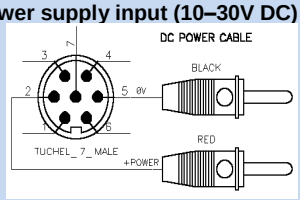
Channels:	32 x +/-10V analog outputs via Sub-D male socket
Resolution:	16 bit D/A converter, with smoothing filter
Power supply input:	10-30 VDC, power consumption <24 Watt
Analog signal bandwidth:	see frequency table
Transmission:	Digital PCM Format
Dimensions:	205 x 105 x 65mm
Weight:	1.00kg without cables and antenna
Overall system accuracy between encoder input and decoder output:	+/-0.2% without sensor influences
Environmental	
Operating:	-20 … +70°C
Humidity:	20 ... 80% not condensing
Vibration:	5g
Static acceleration:	10g in all directions
Shock:	100g in all directions

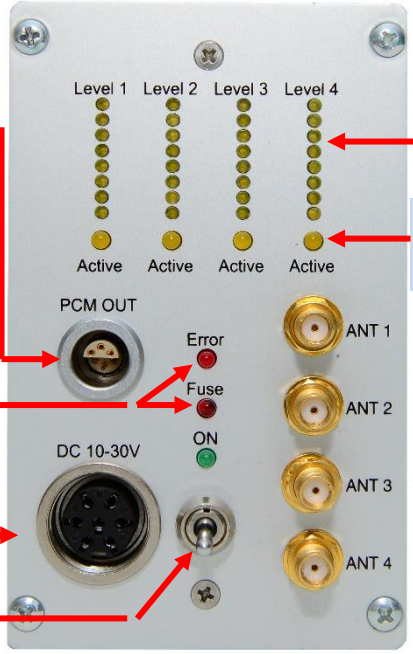
CTP-DEC32 Receiver unit for max 32 Channels output via 37 pol. Sub D (radio transmission version with HF BOX Quad with 4 receiver 1250-5000kbit)

PCM OUT
Pin 1 -----
Pin 2 = PCM + (pink wire)
Pin 3 = PCM -- (blue wire)
Pin 4/5 = common GND & shield (black/green)
Pin 6 -----

Transmission error LED
Fuse of powering defect LED

7-pole female TUCHEL connector for power supply input (10–30V DC)





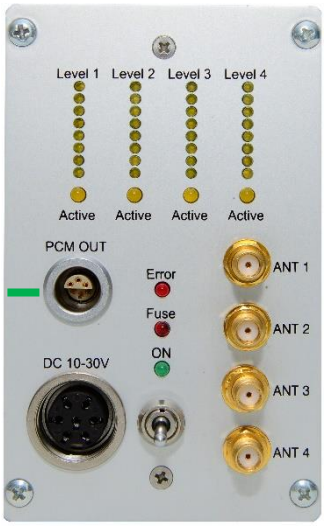
4x HF Level display

Active DATA LED, up to 2 receivers can be active! If a fault data is identified, it will switch automatically to a valid data from other receiver

4x SMA inputs for RX antenna

Power Switch

PCM/ DATA cable Length 0,5m standard (up to 25m on request)



HF BOX Quad System Parameters:

HF receivers	4
Antenna connection	SMA
Output	PCM
Power supply input:	10-30 VDC, power consumption <24 Watt
Dimensions:	205 x 105 x 65mm
Weight:	1.050 kg without cables and antenna
Environmental	
Operating:	-20 … +70°C
Humidity:	20 ... 80% not condensing
Vibration:	5g
Static acceleration:	10g in all directions
Shock:	100g in all directions

Settings CTP-Rotate-ENC	Programmable via web interface

Web interface address LAN adapter:
e.g. IP 192.168.0.110 or 111, 112
(see current IP no. on LAN-Adapter!!)
Settings:

STG
Gain 125-250-500-1000-2000
Half- and full bridge
Make Auto Zero YES/NO

ICP
Gain 1-2-4-8-16

VOLT
Range ±0,625V, ± 1,25V, ±2,5V,
± 5V, ±10V

TH-K
Range -50 to 1000°C, -50 to 500°C
or -50 to 250°C

PT100/1000

Type:	PT100	4 Wire
	PT100	3 Wire
	PT100	2 Wire
	PT1000	4 Wire
	PT1000	3 Wire
	PT1000	2 Wire

Range: -25..150 °C
-50..300 °C
-100..600 °C

Selectable for each channel!